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01-29-02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Joshua B. Paul et al.

PATENT APPLICATION

Serial No.: 09/976,549

Group Art Unit: 2877

Filed: October 12, 2001

Examiner:

For: ABSORPTION SPECTROSCOPY INSTRUMENT WITH
OFF-AXIS LIGHT INSERTION INTO CAVITY

Information Disclosure Statement

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Hon. Assistant Commissioner
for Patents
Washington, D.C. 20231

Sir:

The following information is submitted in
compliance with Applicants' duty of disclosure under 37
CFR § 1.56. A copy of each reference is enclosed.

U.S. Patents

<u>Pat. No.</u>	<u>Patentee</u>	<u>Grant Date</u>
4,793,709	Jabr et al.	12/27/88
5,528,040	Lehmann	06/18/96
5,912,740	Zare et al.	06/15/99

Other References

D.A. Jackson, "The Spherical Fabry-Perot
Interferometer as an Instrument of High Resolving Power
for use with External or with Internal Atomic Beams",
Proceedings of Royal Society, London, Ser. A., 1961, Vol.
263, pp. 289-308.

J.J. Scherer et al., "Cavity Ringdown Laser Absorption Spectroscopy: History, Development, and Application to Pulsed Molecular Beams", *Chemical Reviews*, 1997, Vol. 97, No. 1, pp. 25-51.

D. Ramanini et al., "Diode Laser Cavity Ring Down Spectroscopy", *Chemical Physics Letters*, 1997, Vol. 270, No. 5-6, pp. 538-545.

J. Ye et al., "Ultrasensitive Detections in Atomic and Molecular Physics: Demonstration in Molecular Overtone Spectroscopy", *J. Opt. Soc. Am. B.*, Vol. 15, No. 1, 1998, pp. 6-15.

B.A. Paldus et al., "Cavity-Locked Ring-Down Spectroscopy", *Journal of Applied Physics*, 1998, Vol. 83, No. 8, pp. 3991-3997.

A. O'Keefe et al., "Cavity Ring-Down Optical Spectrometer for Absorption Measurements Using Pulsed Laser Sources", *Review of Scientific Instruments*, 1988, Vol. 59, No. 12, pp. 2544-2551.

D.Z. Anderson et al., "Mirror Reflectometer Based on Optical Cavity Decay Time", *Applied Optics*, 1984, Vol. 23, No. 8, pp. 1238-1245.

A. O'Keefe et al., "CW Integrated Cavity Output Spectroscopy", *Chemical Physics Letters*, 1999, Vol. 307 (5-6), pp. 343-349.

D. Herriott et al., "Off-Axis Paths in Spherical Mirror Interferometers", *Applied Optics*, 1964, Vol. 3, No. 4, pp. 523-526.

D. R. Herriott et al., "Folded Optical Delay Lines", *Applied Optics*, 1965, Vol. 4, No. 8, pp. 883-889.

K. K. Lehmann et al., "The Superposition Principle and Cavity Ring-Down Spectroscopy", *J. Chem. Phys.* 1996, Vol. 105, No. 23, pp. 10263-10277.

G. Meijer et al., "Coherent Cavity Ring Down Spectroscopy", *Chemical Physics Letters*, 1994, Vol. 217, No. 1,2, pp. 112-116.

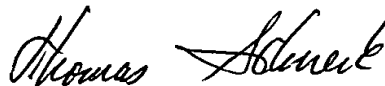
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Date: December 31, 2001

Respectfully submitted,



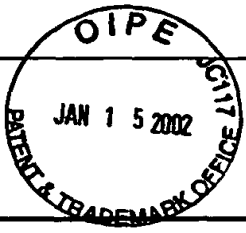
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FORM PTO-1449			Atty. Docket No. LGR-002		Serial No. 09/976,549	
LIST OF PRIOR ART CITED BY APPLICANT						
			Applicant: Joshua B. Paul et al.		Filing Date: October 12, 2001	
U.S. PATENT DOCUMENTS						
Examiner Initial*	Document Number	Grant Date	Name	Class	Sub Class	Filing Date
	DA					
	DB					
	DC					
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	DE					
	DF					
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	DI					
	DJ					
FOREIGN PATENT DOCUMENTS						
Examiner Initial*	Document Number	Grant Date	Country	Class	Sub Class	Translation Yes No
	DK					
	DL					
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)						
	DM	✓ D. R. Herriott et al., "Folded Optical Delay Lines", <i>Applied Optics</i> , 1965, Vol. 4, No. 8, pp. 883-889.				
	DN	✓ K. K. Lehmann et al., "The Superposition Principle and Cavity Ring-Down Spectroscopy", <i>J. Chem. Phys.</i> 1996, Vol. 105, No. 23, pp. 10263-10277.				
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EXAMINER:				DATE CONSIDERED:		
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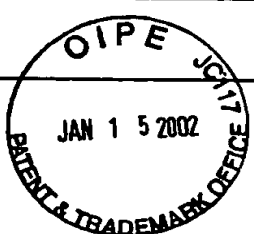
U.S. PATENT DOCUMENTS						
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AA	4,793,709	12/27/88	Jabr et al.	356	445	
AB	5,528,040	06/18/96	Lehmann	250	343	
AC	5,912,740	06/15/99	Zare et al.	356	437	
AD						
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AI						
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FOREIGN PATENT DOCUMENTS						
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AK						
AL						

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)	
AM	D.A. Jackson, "The Spherical Fabry-Perot Interferometer as an Instrument of High Resolving Power for use with External or with Internal Atomic Beams", <i>Proc. of Royal Soc., London, Ser. A.</i> , 1961, Vol. 263, pp. 289-308.
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BK						
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BM	~	J. Ye et al., "Ultrasensitive Detections in Atomic and Molecular Physics: Demonstration in Molecular Overtone Spectroscopy", <i>J. Opt. Soc. Am. B.</i> , Vol. 15, No. 1, 1998, pp. 6-15.				
BN	~	B.A. Paldus et al., "Cavity-Locked Ring-Down Spectroscopy", <i>Journal of Applied Physics</i> , 1998, Vol. 83, No. 8, pp. 3991-3997.				
BO	~	A. O'Keefe et al., "Cavity Ring-Down Optical Spectrometer for Absorption Measurements Using Pulsed Laser Sources", <i>Review of Scientific Instruments</i> , 1988, Vol. 59, No. 12, pp. 2544-2551.				
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